

EWG files with HBD info

Ermias Atomssa
HBD meeting

04.06.2010

Bottom line

- The current compactCNT format has some disadvantages for use in electron analyses using HBD
 - CompactCNT readout is intrinsically very slow
 - People are working on it, it's so far not clear (for me) how much improvement is possible
 - Contains a lot of tracks that electron analyzers are not interested in
 - Charged track/Electron track ratio is ~225%
 - If read through the taxi, electron analyses will have to wait (unnecessarily) for each event until charged track analyses are done
 - Contains many events that have no electrons
 - Contains events outside BbcZVertex reach of HBD analyses
- Keep only things electron analyzers are interested in
 - The EWGs were initially created for this exact purpose
 - Unfortunately no EWG from official production this year
 - Proposal by Ilia to produce EWGs by taking a ride on the analysis taxi
 - Investigated disk space requirement

What to keep and what to throw

- The following nodes have to be there
 - PHGlobal and possibly ReactionPlaneObject
 - EWGCentralTrack
 - HbdMiniCell
- HbdMiniCell is highest contributor in terms of space
 - We can skip storing Hbd info for events with no electrons
 - Can be done for PHGlobal too => complication in event mixing
- Did some size test with various configurations
 - Zvertex cut at 20cm
 - Eid: $n_0 \geq 2/3$, $\chi^2/n_{pe0} < 10$, $disp < 5$, $prob > 0.01$, $ecore > 0.15$, $e/p > 0.6$, $pt < 20$, $qual = 31||51||61$
 - Reset (purge) HbdMiniCellList when no electron is found with the above eid
 - This will reduce the HbdMiniCell size to zero for such events (~70% of all events)

cut type	Input c C N T (Q C D)	Input E W G T (M B I) (T B)	Input E W G T (M B I) (T B)
Eid($n_0 \geq 3$), keep all hbd, all events	2.4	241	12
Eid($n_0 \geq 2$), purge hbd if $n_{El} = 0$, all events	2.4	244	12.15
Eid($n_0 \geq 2$), purge hbd if $n_{El} = 0$, all events	2.4	90	4.43
Eid($n_0 \geq 2$), purge hbd if $n_{El} = 0$, $ z_{vtx} < 20$	2.4	67	3.34

Open issues

- Urgent
 - Where can we find a few TB of space to store those files?
 - How severe should the eid cuts be?
 - May require a few EWG production rides (updated recalibrators etc...)
- Less urgent (but still important)
 - There have been disk access issues in the past on EWGs
 - If many analyzers try to read from files staged on the same disk (which will probably be the case), the disks become overwhelmed and crash
 - In previous years, an analysis “rickshaw” has been used as a solution
 - A volunteer collects analysis modules from interested parties and runs a macro that registers all modules for a one time pass over the EWGs
 - Will have to find a way to enforce this if the EWGs become too popular
- What else?